25,397

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6: G06F 13/00

A1

(11) International Publication Number: WO 98/40823

(43) International Publication Date: 17 September 1998 (17.09.98)

(21) International Application Number: PCT/US98/04204

(22) International Filing Date: 4 March 1998 (04.03.98)

(30) Priority Data:
08/815,690 12 March 1997 (12.03.97) US

(71) Applicant: ELONEX PLC [GB/GB]; 2 Apsley Way, London NW2 7LF (GB).

(71)(72) Applicant and Inventor: KIKINIS, Dan [CH/US]; 20264 Ljepava Drive, Saratoga, CA 95070 (US).

(74) Agent: BOYS, Donald, R.; P.O. Box 187, Aromas, CA 95004 (US).

(81) Designated States: CN, JP, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published

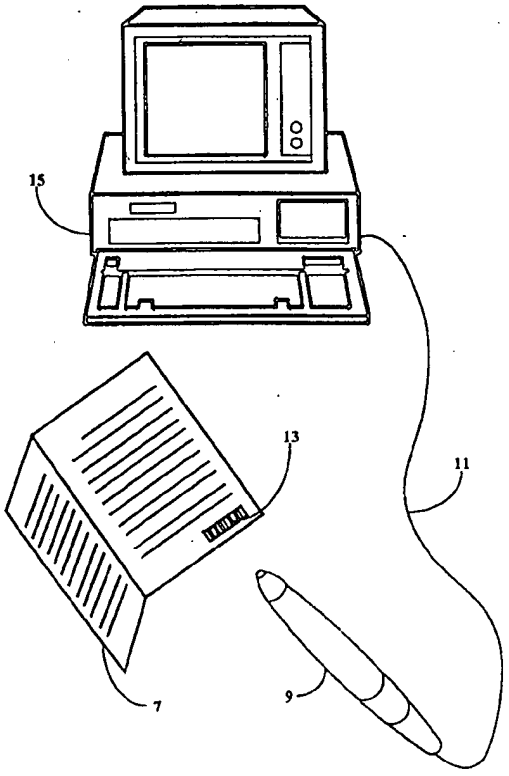
With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: METHOD FOR COLLECTING URLs FROM PRINTED MEDIA

(57) Abstract

A method for providing Universal Resource Locators (URLs) to potential users of the URLs (13) has the URLs (13) presented as machine–readable code in visible media, such as advertisements in newspapers (7) and magazines and in TV presentations. A machine reader, such as a bar code reader (9), connected to a computer (15) having a WEB browser application, is used to acquire the URL (13), and the acquired URL (13) is provided to the WEB browser application in the computer (15). In some cases the URL (13) is stored for future use, and in other cases the URL (13) is used immediately to direct the computer (15) or connect to the Internet Server storing the WEB page associated with the URL (13), and to download and display the WEB page, URLs (13) may be numeric code associated with URLs (13) in a table accessible on a Server on the Internet, printed or otherwise displayed bar code, magnetic ink, and other sorts of machine–readable code.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

Method for Collecting URLs from Printed Media

Field of the Invention

The present invention is in the field of data collection devices, and has particular application to devices and systems for reading and scanning media for the purpose of storing information on a computer.

Background of the Invention

In the present age of the Internet, companies offering products or services for sale are creating what are known as Web sites on the Internet World Wide Web (WWW. These Web sites are accessible on the WWW by addresses termed Universal Resource Locators (URL).. Consumers who prefer to shop from their homes and corporate entities engaged in buying and trading with other corporations are targets for URLs published in printed media and presented in television programs and advertisements by companies who see Web sites as a viable sales tool.

A URL address is a complex string of characters that includes punctuation marks and separators. A URL can sometimes be quite long when compared to conventional codes used with computers, such as document paths. The character string that is a URL is designed to interact with computer software programs that are meant to act as navigation aids for users attempting to locate or "travel" to a desired destination on the Internet. These software programs are typically known as browsers. A standard URL contains language symbolized by

the various characters in the string, and must be interpreted by the browser in order to take the user to the site. This information includes type of protocol, document path, host computer identification, and other information as may be needed, to identify subject matter, company name, or type of product or service.

Typically, a user will manually type a URL into a field in a display provided by the navigating software. Typically by pressing enter on the keyboard after a URL is entered, the address URL) is submitted to the browser, activating the communication mode. When the host computer responds, data is downloaded and a Web page is displayed on the user's screen. In virtually all cases, the user is expected to know the URL before he can submit it. This can be a problem as navigation software cannot interpret a URL that has been entered incorrectly. Also, some URL's are very long and complicated, as described previously, making it even more difficult for most users to enter the URL error free. Copying a complicated URL from an advertisement in print or remembering it from seeing it briefly on television can be frustrating; especially if the characters are blurred or wrinkled, or otherwise compromised.

What is clearly needed is a system methodology, including software, compatible with existing technology, that would allow a user to scan and retrieve a URL and related information from a printed document or television screen, and transmit such information directly to a personal computer. A system with this capability could eliminate human error as it relates to manually typing URL's, and other manual operations required to present this information to a suitable browser.

Summary of the Invention

In a preferred embodiment of the present invention, a method for providing a Universal Resource Locators (URL) comprising a character string to a computer user is provided, comprising steps of (a) converting the character string to a machine-readable indicia; and (b) presenting the machine-readable indicia in a visible media available to the computer user. The machine-readable indicia may a bar code, and the bar code may provided on a printed presentation. Such bar codes may also presented in at least one frame of a television presentation.

In some embodiments the URL is converted to a numeric code of fewer numerals than the number of characters of the character string of the URL, and the numeric code is converted into machine-readable indicia and presented in a visible media.

In another aspect of the invention, a method for acquiring a Universal Resource Locator (URL) for a browser application on a computer is provided, comprising steps of (a) reading the URL from a visible media with a machine-reader; and (b) storing the URL in a file accessible to the browser application. In this aspect, the URL in visible media may be a bar code and the machine-reader in this instance is a bar code reader. Magnetic characters and a magnetic reader may also be used.

In yet another aspect of the invention, a method is provided for directing a Web-browser application running on a computer having an Internet connection to load and display a WEB page from an Internet Server. This method comprises steps of (a) acquiring a Universal Resource Locator (URL) for the WEB page by reading the URL from a visible media with a machine-reader having a communication link to the computer; (b) providing the URL to a browser application running on the computer: and (c) directing the browser to connect to Internet Server over the Internet connection and to download and display the WEB

page. Again the machine-reader may be a bar code reader and the URL a bar code representing the URL. The machine-reader may be a magnetic character reader, and the URL provided in magnetic ink in print media.

In yet another aspect a method is provided for acquiring a Universal Resource Locator (URL) for use in directing a WEB browser application to download and display a WEB page, comprising steps of: a) reading a numeric code in visible media with a machine-reader connected to a computer running a WEB browser application; (b) connecting to an Internet Server having a table of URLs associated with numeric codes; and (c) retrieving and storing the URL associated with the numeric code from the table. In some embodiments a further step (d) directs the computer to connect to the Internet Server having a WEB page associated with the URL and to download and display the WEB page.

In various embodiments of the invention methods are provided to allow quick and efficient acquisition of URLs, and to avoid human error in providing such URLs to a WEB browser.

Brief Description of the Drawing Figures

Fig. 1 is an illustration of an embodiment of the present invention, wherein a data collection device is shown reading a URL from a document while connected to a computer.

Fig. 2 is an illustration of software architecture as used in an embodiment of the present invention.

Fig. 3 is an illustration of an alternative embodiment wherein wireless communication is used, and the source document contains a URL that is both machine and human readable.

Fig. 4 is an illustration of yet another embodiment of the present invention wherein the source of information is television advertisement.

Description of the Preferred Embodiments

Fig. 1 is an illustration of an embodiment of the present invention wherein a URL 13 is rendered as a standard bar code, and printed on a source document 7. In an embodiment of the present invention, the methodology is Optical Recognition (OR). A data collection device 9, which is in this embodiment a bar code reader. is used to scan the bar code, and the URL is read into the computer attached to the bar code reader.

Optical Recognition as it applies to bar coding, is a standard method used in many industries, such as retail, shipping, and warehousing. It has proven to be highly successful and virtually error free. In this embodiment of the present invention the bar code reader reads the bar code, which is a coded URL, and stores the URL on the connected computer associated with a Web browser program. Most such programs incorporate lists of URLs known in the art as bookmarks. Bookmarks are typically displayed as literal names rather than as URLs, and a user may select a bookmark by pointer and cursor techniques well known in the art, wherein the browser application relates the literal name to the associated URL, and broadcasts the URL. In a preferred embodiment, scanning a bar-coded URL enters the scanned URL into the browser's Bookmarks data base.

In another embodiment of the present invention, a code system is created for the purpose of expressing URLs 13 in numerical form,

allowing for a shorter span of bars and spaces compromising each printed code. A software step (shown in Fig. 2) could be added to convert the URL 13 back to it's original character-string form, allowing the browser to utilize the information. In another embodiment individual URLs 13are registered at a separate site (server) on the WWW known by the navigating software. At this location, URLs are associated with numeric code, as suggested above. URLs entered as numeric code are broadcast to an Internet server, which compares the numeric code with a database, and returns the URL character string. URLs may be decoded and read by the browser and downloaded to computer 15, or utilized for further navigation. Companies who provide OR products and services routinely customize bar codes to adapt to specific field requirements.

It will be apparent to one with skill in the art that there are many ways to customize and standardize bar code sequences utilizing software and customer support operations that may provide decoding areas on the Internet or other such aids.

Fig. 2 is an illustration of software architecture as is used in a preferred embodiment of the present invention, wherein source document 7, containing URL 13, is scanned using data collection device 9. The scanned information is then transmitted to a URL data file in step 17. In an embodiment where Optical Recognition is used (bar coding), a URL conversion process is added in step 19 for decoding purposes. After converting the information, a navigator screen is displayed in step 21. A tool on the navigator screen in step 21 allows the user to retrieve converted URL's in step 23. An option is then presented allowing the user to store URL's in a bookmark file for repetitive accessing, or in a cache for later use. A desired URL can then be selected and a decision made to go to that destination in step 31. The navigating software will then automatically connect the user to the Internet and display the Web

page associated with the URL in step 33. Additional URLs can be accessed at any time from the bookmark file or the cache and submitted in step 31 resulting in a new Web pages in step 33. This process is achieved in a preferred embodiment of the present invention such that no typing on the keyboard is required.

It will be apparent to one with skill in the art that there are many ways software might be designed to interface with an existing or modified network navigator to achieve the desired results of eliminating the possibility of human error. For example, in one embodiment, the entire process may be wholly automated from the scan to the resulting Web page thereby eliminating any user interaction. This automated option could exist for users who desire to go directly to the Web page after each separate scan.

It will also be apparent to one with skill in the art that there are numerous methods of communication that may be utilized in transmitting scanned information from the media source to the computer such as, MICR (Magnetic Ink Character Recognition), OCR (Optical Character Recognition), OMR (Optical Mark Recognition) etc. Fig.'s 3 and 4, described below, will illustrate two of the many additional embodiments that are in accordance with the spirit and scope of the present invention.

Fig. 3 is an illustration of an embodiment of the present invention wherein source document 7 contains URL 13 printed in magnetic ink, to be read by data collection device 9 using the technology of MICR. In this embodiment, in accordance with the present invention, data collection device 9 is shaped like a pen and is equipped with a magnetic reader at the head. In another embodiment, the data collection device might be shaped differently so long as the magnetic reader can make sufficient contact with the printed surface. Also in this embodiment, the method of communication between data collection

device 9 and computer 15 is of a wireless form such as Infrared, or Microwave. The term wireless, as is used in an embodiment of the present invention, is defined by the capability of the system to transmit digital information from one point to another without the use of cable 11.

Regardless of the method of communication used to transmit digital information, or the technology used to scan source document 7, the methodology of the present invention is the same in scope and purpose, that is, to scan URL 13 and transmit information directly to computer 15 without copying, typing, or performing other steps which could introduce human error.

One advantage of using MICR technology is that URL 13 is both machine and human readable. In the event of system breakdown, human input could be used. Also, magnetic ink printers are now commercially available, and magnetic ink, toner, and other accessories are more readily available than they were in the past. This could allow advertisers a smaller capital investment in printing costs than might be the case with newer technologies.

Another advantage illustrated in Fig. 3 is the wireless mode of communication used to transmit scanned information to computer 15. Wireless communication could be utilized when working in a network environment where this form of communication is standard. This form of communication could also be used in an embodiment where the presence of a cable might be inconvenient.

The software used in conjunction with various embodiments of the present invention may be slightly modified to interface with each case where different technologies are used, however, the scope and purpose of the software would remain the same as described in Fig. 2. For example; an embodiment described with reference to Fig. 3 would

not require the URL conversion process described in step 19 of Fig. 2, however, the remaining software would function as intended.

Fig. 4 is an illustration of an embodiment of the present invention wherein source document 7 is a television advertisement, and data collection device 9 is an interactive tool, much like a joy stick available with interactive computer games. Circuitry may be incorporated into the television set which allows the URL 13 to be recognized by a remote receiver in data collection device 9. The information is then transmitted to computer 15 via cable 11..

As more companies progress from local advertising in print media to national advertising in television media, URL's 13 will be incorporated into television commercials, programs, and infomercials. The likelihood of human error involved in copying and transporting URL 13 from a television is even greater than it is from print. URL 13 is displayed on the television screen only temporarily, making it difficult to remember and write down. Even when a viewer may have pen in hand, the time required to physically write URL 13 on paper is limited to the time that it is displayed on the screen, causing the user to write hurriedly, perhaps resulting in missed symbols or illegible characters. Advertisers would benefit enormously by having their URL's 13 automatically transmitted safely into a users computer, thereby eliminating lost business caused by human error.

It will be apparent to one with skill in the art that there are many embodiments both unique and advantageous that might be created, and changes that might be made to said embodiments, without departing from the spirit and scope of the present invention. Many such variations have already been described above.

What is claimed is:

1. A method for providing a Universal Resource Locators (URL) comprising a character string to a computer user, comprising steps of:

(a) converting the character string to a machine-readable indicia; and

(b) presenting the machine-readable indicia in a visible media available to the computer user.

2. The method of claim 1 wherein the machine-readable indicia is a bar code, and the bar code is provided on a printed presentation.

3. The method of claim 1 wherein the machine-readable indicia is a bar code, and wherein the bar code is presented in at least one frame of a television presentation.

4. The method of claim 1 wherein the URL is converted to a numeric code of fewer numerals than the number of characters of the character string of the URL, and the numeric code is converted into machine-readable indicia and presented in a visible media.

5. The method of claim 4 wherein the machine-readable indicia is a bar code.

6. The method of claim 1 wherein the machine-readable indicia is the URL character string printed in magnetic ink.

7. A method for acquiring a Universal Resource Locator (URL) for a browser application on a computer, comprising steps of:

(a) reading the URL from a visible media with a machine-reader; and

(b) storing the URL in a file accessible to the browser application.

8. The method of claim 7 wherein the URL in visible media is a bar code and the machine-reader is a bar code reader.

9. The method of claim 7 wherein the URL in visible media is a character string printed in magnetic ink, and the machine-reader is a magnetic character reader.

10. A system for directing a Web-browser application running on a computer having an Internet connection to load and display a WEB page from an Internet Server, comprising steps of:

(a) acquiring a Universal Resource Locator (URL) for the WEB page by reading the URL from a visible media with a machine-reader having a communication link to the computer;

(b) providing the URL to a browser application running on the computer: and

(c) directing the browser to connect to Internet Server over the Internet connection and to download and display the WEB page.

11. The method of claim 10 wherein the machine-reader is a bar code reader and the URL is a bar code representing the URL.

12. The method of claim 10 wherein the machine-reader is a magnetic character reader, and the URL is provided in magnetic ink in print media.

13. A method for acquiring a Universal Resource Locator (URL) for use in directing a WEB browser application to download and display a WEB page, comprising steps of:

(a) reading a numeric code in visible media with a machine-reader connected to a computer running a WEB browser application;

(b) connecting to an Internet Server having a table of (URLs associated with numeric codes; and

(c) retrieving and storing the URL associated with the numeric code from the table.

14. The method of claim 13 comprising a further step (d) directing the computer to connect to the Internet Server having a WEB page associated with the URL and to download and display the WEB page.

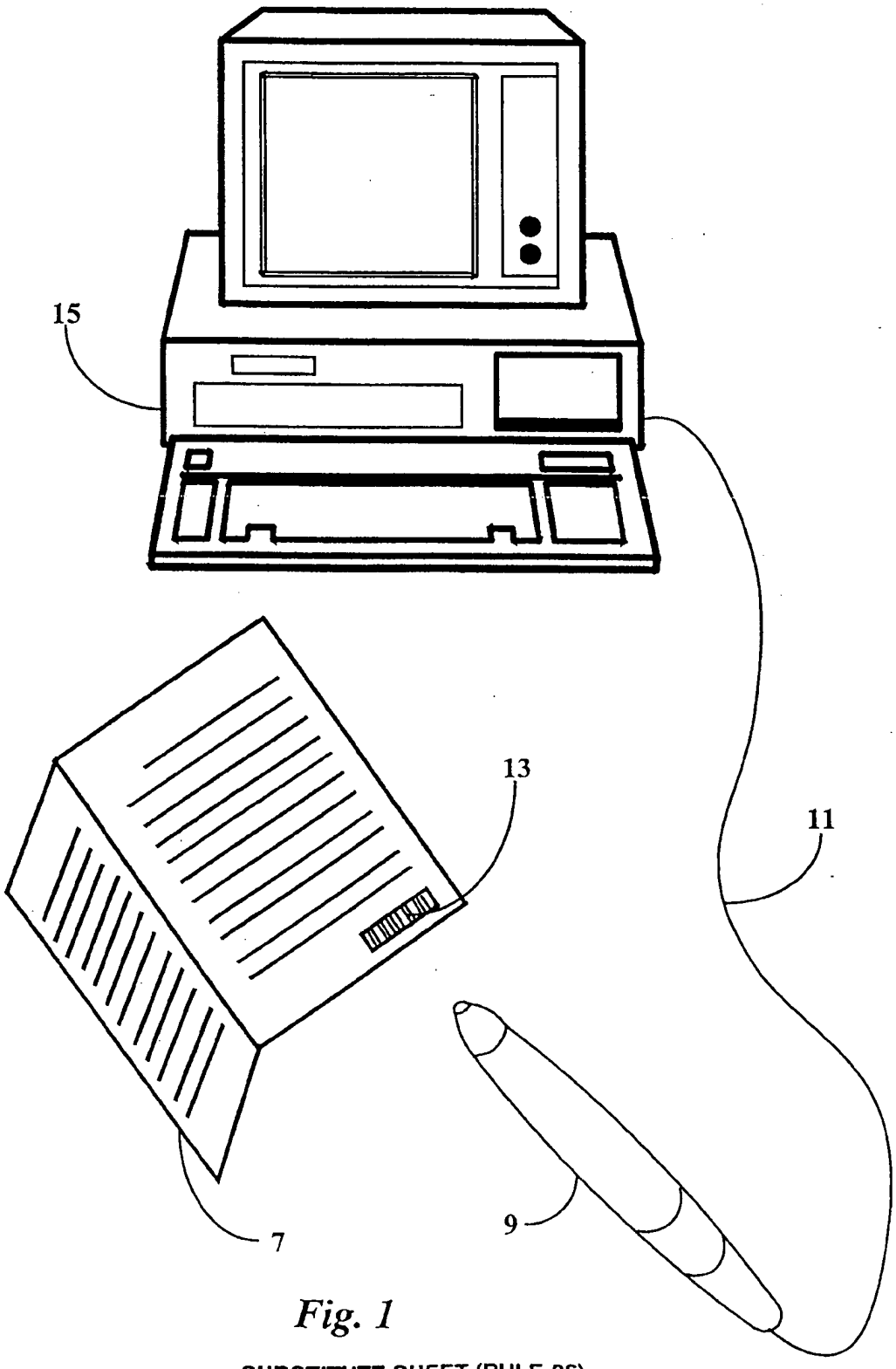


Fig. 1

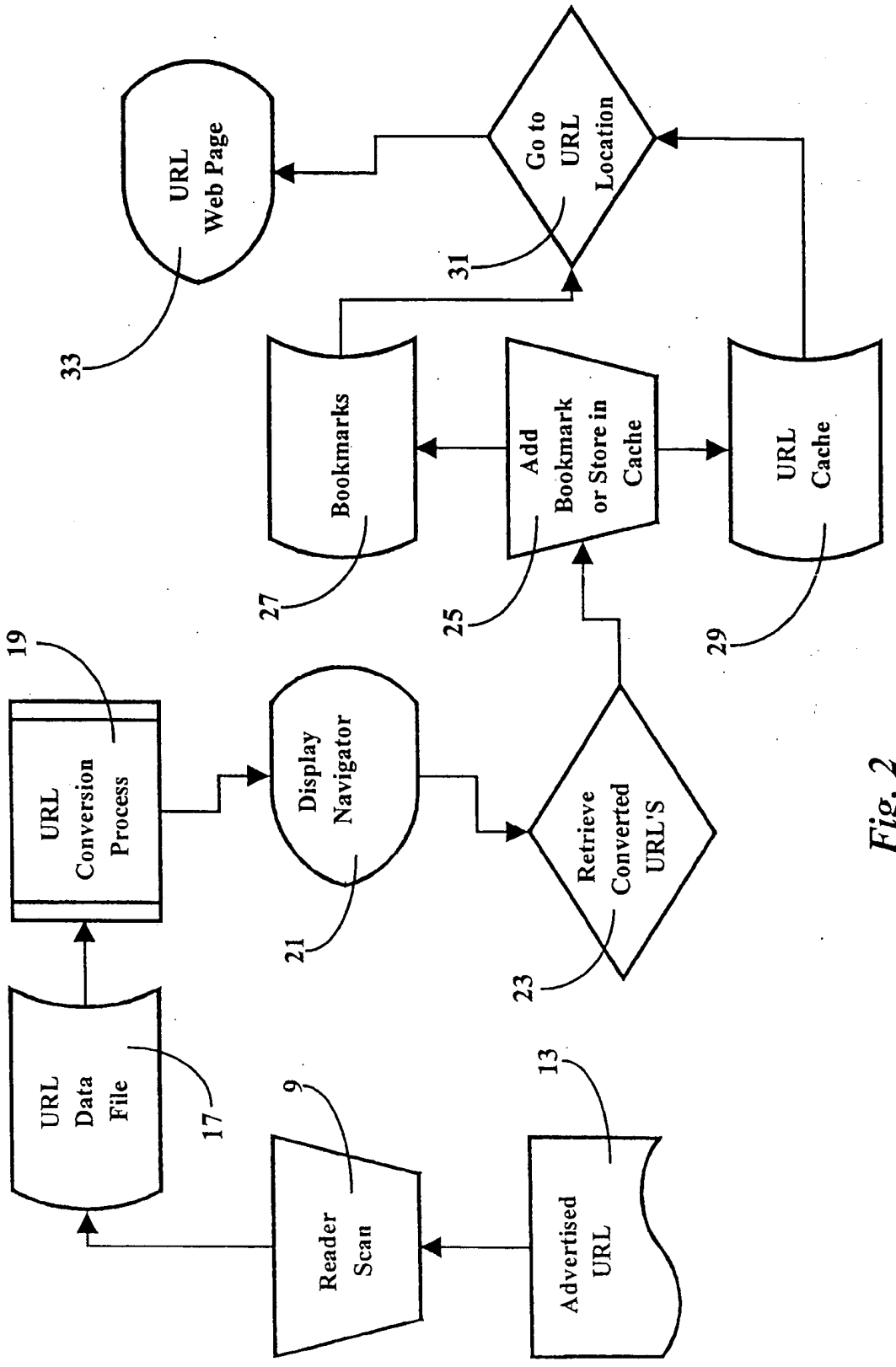

URL Web Page
33
Go to URL Location
31
Bookmarks
27
Add Bookmark or Store in Cache
25
URL Cache
29
19
URL Conversion Process
Display Navigator
21
Retrieve Converted URL'S
23
URL Data File
17
9
Reader Scan
13
Advertised URL

Fig. 2

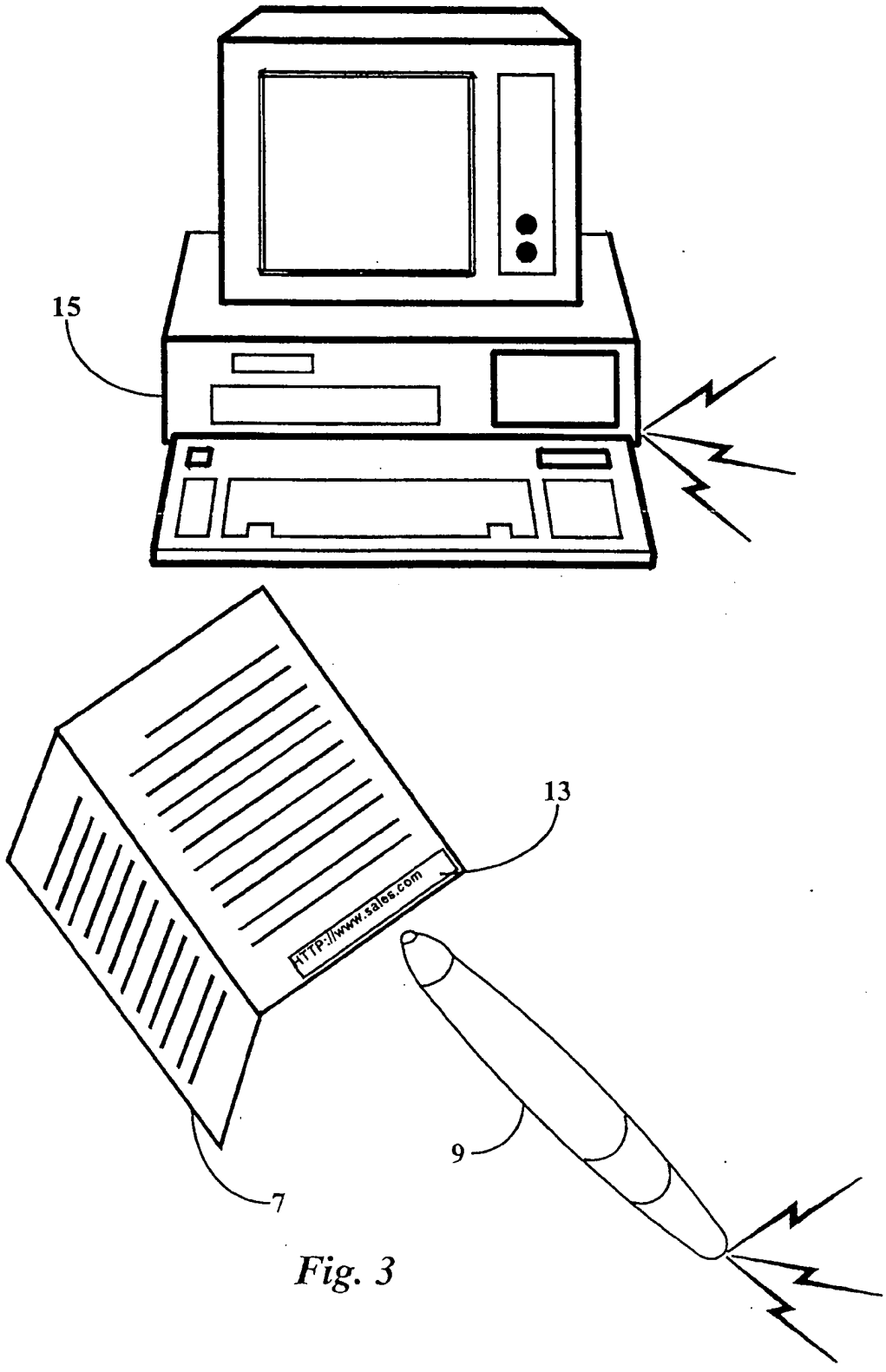


Fig. 3

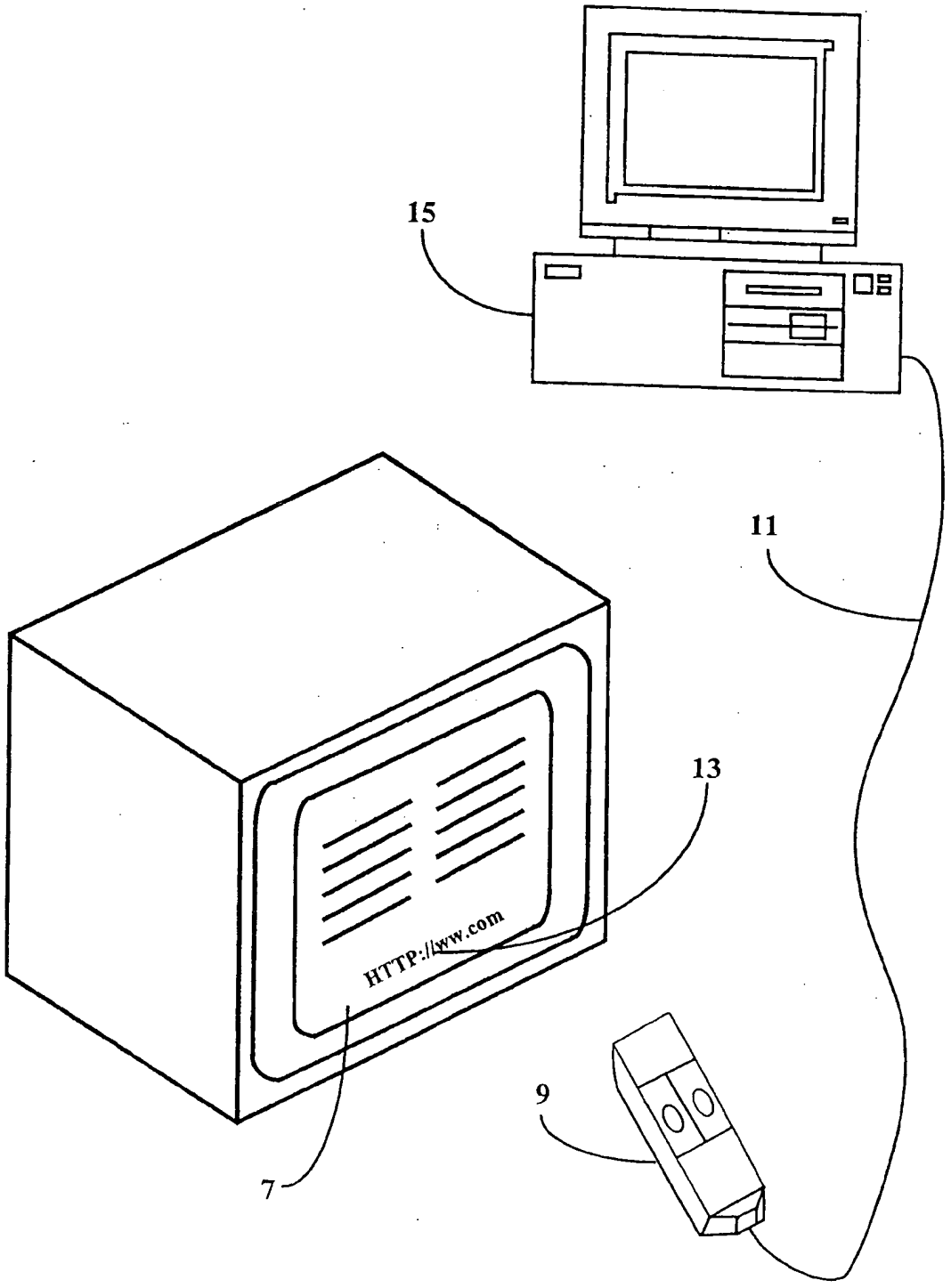


Fig. 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/04204

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :G06F 13/00

US CL :Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 395/200.33, 200.38, 200.47. 200.48, 200.49, 200.55, 200.56, 200.57, 200.59, 200.75

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS, DIALOG
(universal or uniform)resource locator(s), URL, bar code(s), Internet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HUDETZ, FRANK, SYSTEM FOR USING ARTICLE OF COMMERCE TO ACCESS REMOTE COMPUTER, PCT WO97/01137, JANUARY 1997, page 4, lines 13-24, page 14, lines 29-35, page 15, lines 16-28, page 16, line 36, page 17, lines 1-2, lines 15-18, page 18, lines 3-10, page 20, lines 1-7, page 21, lines 6-37, page 22, lines 1-4.	1-14
X,P	US 5,640,193 A (WELLNER) 17 June 1997, col 2, lines 24-33, col 4, lines 29-45, lines 58-60, col 7, lines 11-15, col 9, lines 4-7, col 10.	1-6

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 18 JUNE 1998	Date of mailing of the international search report 24 AUG 1998
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer MOUSTAFA M. MEKY Telephone No. (703) 305-9697

Form PCT/ISA/210 (second sheet)(July 1992)*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/04204

A. CLASSIFICATION OF SUBJECT MATTER:
US CL :

395/200.33, 200.38, 200.47. 200.48, 200.49, 200.55, 200.56, 200.57, 200.59, 200.75

25,397

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : G06F 17/30

A1

(11) International Publication Number: WO 99/63457

(43) International Publication Date: 9 December 1999 (09.12.99)

(21) International Application Number: PCT/GB99/01766

(22) International Filing Date: 3 June 1999 (03.06.99)

(30) Priority Data:

9811941.5	3 June 1998 (03.06.98)	GB
9814947.9	9 July 1998 (09.07.98)	GB
9908554.0	14 April 1999 (14.04.99)	GB

(71)(72) Applicant and Inventor: KAPLAN, Robert [GB/GB]; 4 Creswick Walk, London NW11 6AM (GB).

(74) Agents: BERESFORD, Keith, Denis, Lewis et al.; Beresford & Co., 2-5 Warwick Court, High Holborn, London WC1R 5DJ (GB).

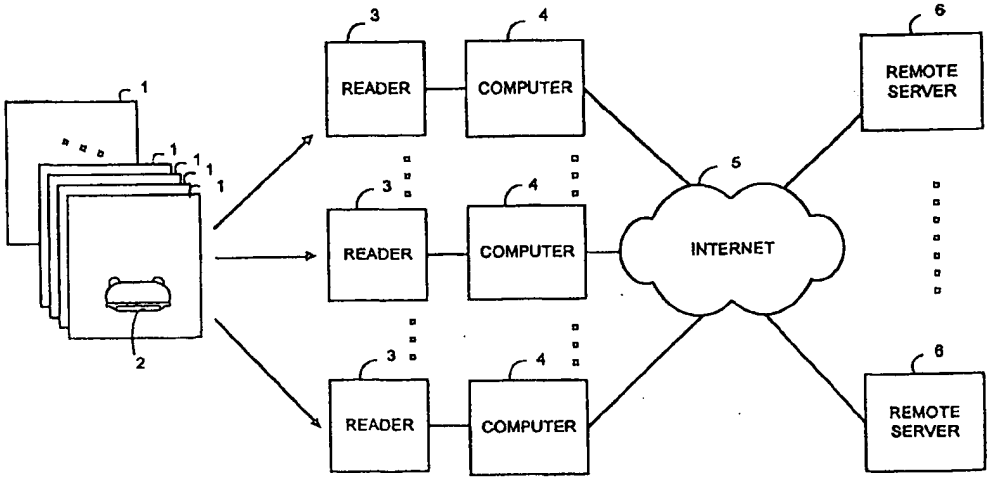
(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published

With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: METHOD AND APPARATUS FOR ACCESSING WEB SITES VIA THE INTERNET



(57) Abstract

A number of advertising leaflets (1) each having attached thereto a swipe card having address data recorded thereon are provided together with a number of user stations each comprising a card reader (3) and a computer (4) all having facilities for connecting to the Internet (5), and a number of remote servers (6) also connected to the Internet (5) having stored therein web sites. A swipe card (2) having address data in a machine readable form is passed through a card reader (3). The address data is then stored in a memory in the card reader (3) and then transferred to a computer (4). The computer (4) then interprets the data read by the card reader (3) and generates a command to form a communications link to a remote server (6).

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

METHOD AND APPARATUS FOR ACCESSING WEB SITES VIA THE INTERNET

The present invention relates to an information transfer system. In particular the present invention relates to novel methods and apparatus for facilitating transfer of information from Internet web sites to other computer terminals.

In recent times the amount of information available and the number of available sources of information has increased dramatically. A problem with the increasing volume of information and sources of information is that it is now difficult for information providers, such as advertisers to ensure that individuals obtain relevant information from them.

In particular, one source of information which has grown dramatically in recent years are web sites on the Internet. Although to a certain extent search engine programs automate the process of searching for web sites, the success of a search engine program is dependent upon the key words used for a search. If the key words are insufficiently specific too many candidate web sites will be returned and the number of pages to be considered will not be reduced to manageable proportions. If the search criteria are overly specific, sites of interest may not be found.

The present invention aims to provide a information

transfer system for facilitating the retrieval of information from predetermined web sites via the Internet.

In accordance with one aspect of the present invention, there is provided a computer network addressing system for accessing a web site, the system comprising reading means for reading address data from a document; interpretation means for interpreting address data read by said reading means; and linking means for forming a communication link to a web site, said linking means forming said communication link based upon said address data as interpreted by said interpretation means.

In a further aspect of the present invention provides an information retrieval system by which individuals are directed towards relevant information through the distribution of documents having associated therewith a data carrier having address data recorded thereon. The document could be for example an advertising leaflet or a magazine or newspaper or other periodical. When individuals are in possession of such documents they can obtain relevant information by causing the address data recorded on the data carrier to be read by a reader which causes a browser program to access a corresponding web site.

In accordance with another aspect of the present invention there is provided a computer apparatus for obtaining information, said apparatus comprising:

a reading device for reading address data from a document and a computer having a browser stored therein for creating a communications link on the basis of read-in address data.

Embodiments of the present invention will be described by way of example with reference to the accompanying drawings, in which:

Figure 1 is a block diagram for illustrating an information transfer system in accordance with the present invention;

Figure 2 is a schematic diagram illustrating a leaflet having a swipe card attached;

Figure 3 is a schematic diagram of a swipe card;

Figure 4 is a schematic diagram of an addressing system in accordance with an embodiment of the present invention;

Figure 5 is a block diagram of the card reader of Figure 1;

Figure 6 is a flow diagram of the control program of the reading device of Figure 4;

Figure 7 is a block diagram of the memory of the computer of Figure 4;

Figures 8A and 8B are flow diagrams for explaining the flow of control of the computer programs stored in the computer of Figure 4;

Figure 9 is a schematic diagram of a computer network;

Figure 10 is a flow diagram of the flow of control of apparatus in accordance with a second embodiment of the present invention;

Figure 11 is a flow diagram of the flow of control of apparatus in accordance with a third embodiment of the present invention;

Figure 12 is a schematic diagram illustrating a document having a detachable swipe card; and

Figure 13 is a schematic diagram of a magazine with an associated swipe card.

Figure 1 is a block diagram of a system for facilitating the transfer of information from the web sites of advertisers such as companies or other organisations to others such as individuals who may be interested in products and services offered.

The apparatus comprises a number of components which cooperate to effect the transfer of information, namely a number of advertising leaflets 1 each having attached thereto a swipe card having address data recorded thereon and a number of user stations each comprising a card reader 3 and a computer 4 all having facilities for connecting to the Internet 5, and a number of remote servers 6 also connected to the Internet and having stored therein web sites which may be of interest to the individuals.

In use of the invention, an advertiser wishing individuals to access his web site distributes

advertising leaflets 1 having cards 2 thereon to individuals in a conventional manner, such as by being distributed by post or by being handed out inside a shop. When a user is in possession of an advertising leaflet 1 having a swipe card 2 attached the user detaches the swipe card 2 from the leaflet 1 and passes the swipe card 2 through the card reader 3. The address data stored on the swipe card 2 is then read by the reader and transferred to a browser program stored within the computer 4. This causes the computer 4 to download web site information from the server 6 corresponding to the address data read from the swipe card 2. In this way by distributing advertising leaflets having attached thereto swipe cards 2 to a plurality of users each having a computer 4 and a card reader 3 an advertiser can direct users to relevant information stored within a remote server 6.

Figure 2 is a schematic diagram illustrating one of the leaflets 1 having a swipe card 2 attached thereto. The leaflet 1 comprises a conventional advertising leaflet being a paper substrate on which is printed advertising matter. The swipe card 2 attached the leaflet 1 is attached to the paper substrate of the advertising leaflet by means of glue 7. The glue 7 is such as to permit a user to remove the swipe card 2 from the advertising leaflet 1 without damaging the card 2.

Figure 3 is a schematic diagram of a swipe card 2

in accordance with this embodiment of the present invention, which has been separated from a leaflet 1. The swipe card 2 comprises a substrate 8 such as a plastic, paper or card substrate supporting thereon a magnetic strip 9. Recorded on the magnetic strip 9 is machine readable data for recording the web address or Universal Resource Locator (URL) of a web site stored in a remote server 6 from which information is to be obtained.

Figure 4 shows in detail a user station of Figure 1 for obtaining data from a remote server comprising a computer 4 and a card reader 3. The computer 4 of the user station is connected to the internet (not shown in Figure 4) via a communications network 12 such as a telephone network and a modem 13. The computer 4 is also connected to the swipe card reader 3. The swipe card reader 3 comprises a first housing portion 15 and a second housing portion 16 connected to each other so as to define a slot 17 through which a swipe card 18 may be passed.

In using the present invention when a swipe card 2 having a magnetic tape 9 on which address data representative of a way of forming a communications link to a server recorded thereon is passed through the slot 17 of the card reader 3 the card reader 3 is arranged to read the address data from the magnetic tape 9. The address data is then transferred to the computer 2 which

causes a browser program to generate a communications link based on the address data as is described in detail below.

The processing of data passed from the swipe card reader 3 to the computer 4 is coordinated by a device driver program stored in the memory of the computer 4. The device driver may be loaded into the memory of the computer 2 either via a disc 21 and a disc drive 22 or alternatively may be downloaded from the Internet via the communications network 12 and the modem 13. Alternatively the device driver program may be pre-stored in the memory of the computer 4.

Figure 5 is a block diagram of the card reader 3 shown in Figure 4. The card reader 3 comprises a read head 50 which is arranged to read data from a magnetic strip 9 of a card 2 passed through the slot 17 of the reader 3. The read head 50 is connected to a conversion module 51 which is arranged to convert the signal generated by the read head 50 into a digital signal that can be stored in a data buffer 52 which is connected to the read head 50 via the conversion module 51 and a central processing unit (CPU) 53. The CPU 53 is also connected to a read only memory (ROM) 54 and an interface 55. The CPU 53 is arranged to process signals received from the conversion module 50, the data buffer 52 and the interface 55 in accordance with a program stored in the read only memory 54.

Figure 6 is a flow diagram illustrating the use of the card reader 3 of Figure 4.

When a swipe card 2 having address data such as a web site address or a Universal Resource Locator (URL) recorded on a magnetic strip 9, is passed through the slot 17 of the card reader 3, the data recorded on a magnetic strip 9 present on the swipe card 2 is read (s1) by the read head 50. The read head 50 then generates a signal which is passed to the conversion module 51.

The conversion module 51 decodes (s2) the signal generated by the read head 50 into a form which is suitable for storage in the data buffer 52. The decoded signal is transferred via the CPU 53 and stored in the data buffer 52.

When the CPU 53 detects that data has been received from the conversion module 51 and stored in the data buffer 52, this causes the CPU 53 to send (s3) a signal to the computer 4 via the interface 55 to inform the computer that data has been read by the read head 50 and is currently stored in the data buffer 52.

The CPU 53 then in accordance with the program stored in the ROM 54 waits (s4) to receive a signal back from the computer requesting that the data stored in the data buffer 52 be transmitted to the computer 4 via the interface 55.

When a signal requesting that the data stored in the data buffer 52 be transferred to the computer 4 is

received CPU 53 then causes the data to be transmitted (s5) to the computer 4 via the interface 55. Thus in this way the card reader 3 enables data read from a magnetic strip 19 on a swipe card 18 can be transferred to the memory of the computer 4.

Figure 7 is a block diagram of the memory of the computer 4 of Figure 2. Stored in the memory of the computer 4 are a setup module 60, an initialisation module 65, an interface module 70 and a browser program 75. A portion 80 of the memory of the computer 4 is also available for storage of variables.

The setup module 60 comprises a program enabling a user to input into the computer 4 data indicative of where and which type of browser program 75 is stored in memory. The initialisation module 65 comprises a program for starting the interface module 70 and the browser program 75 automatically when a signal is received from the card reader 3. The interface module comprises a program which enables data received from the card reader 3 to be used in the browser program 75. The browser program 75 is a standard browser program known in the art for forming communication links with remote servers and downloading data, such as Netscape or Internet Explorer.

Figures 8A and 8B are a flow diagram for describing the flow control of the programs stored in the memory of the computer 4. When the computer 4 is initially switched on, the initialisation module 65 stored in

memory is activated. This monitors (s10) the interface 55 of the card reader 3 to detect whether a signal has been received indicating that the data buffer 52 of the card reader 3 contains data.

When the initialisation module 65 receives a signal from the card reader 3 this causes the initialisation module to determine (s11) whether the interface module 70 has been activated. If the interface module 70 has not yet been activated the initialisation module 65 activates (s12) the interface module 70.

The initialisation module 65 then determines (s13) whether the browser program 75 has yet been activated. If the initialisation module 65 determines that browser program 75 has not yet been activated, the initialisation module 65 activates the browser program 75 based upon the data previously input using the set up module 60 defining which browser program is available for activation and where the browser program 75 is stored. When the browser program 75 has been activated the initialisation module 65, the initialisation module 70 then passes control to the interface module 70.

The interface module 70 then sends a request (s15) to the card reader 3 to request that data stored in the data buffer 52 of the card reader 3 be downloaded into the memory of the computer 4 via the interface 55 of the card reader 3. The interface module 70 then waits (s16) until data previously stored in the data buffer 52 of the

card reader 3 is received from the card reader 3. When the data previously stored in the data buffer 52 is received the data is then stored (s17) in the data storage portion 80 of the memory of the computer 4. The interface module 70 then activates the address line of the browser program 75 and enters the data stored in the data storage portion of the memory 80 into the address line of the browser program 75 and then passes control to the browser program 75.

When control is passed to the browser program 75, the browser program then forms a link corresponding to the address data in the activated address line which now contains data which previously had been read by the card reader 3. The browser program 75 then downloads a web site corresponding to the address, to enable a user to view the web site in the usual manner.

In the above description the operation of the card reader 3 and computer 4 of the present invention has been described in terms of a card reader 3 which reads and stores data from a swipe card and a program within the memory of the computer 4 which coordinates and controls the transfer of data from the data buffer 52 of the card reader 3 to the memory of the computer for use within a browser program 75. It will however be appreciated that the coordination of the transfer of data could be performed by the CPU 53 in accordance with a program stored within the ROM 54 within the card reader 3 itself.

In such an embodiment, when data has been decoded and read by the card reader 3, the card reader 3 would cause an instruction to be sent to the computer 4 to activate the browser program 75 stored in memory of the computer 4. The CPU 53 would then cause data stored within the data buffer 52 to be transferred to the computer 4 and stored in the address line of the activated browser program 75 which is instructed to form a link corresponding to the address line.

By providing a card reader 3 which itself contains the means for coordinating the transfer of data to a browser 75 the need for an initialisation module 65 and interface module 70 within the computer 4 is thereby avoided. The CPU 53 and ROM 54 provide means by which an initialisation module 65 which is constantly active can be provided and hence reduces the overhead required for running such a program within the computer 4.

Prior to describing a second embodiment of the present invention, a computer network will be described in which a computer can be connected to a number of servers in a number of different ways.

Figure 9 is a schematic diagram of a computer network. The computer network comprises a computer 10 which is connected to a communications network 20 via a modem 30. The communications network 20 may comprise a telephone network or a network of ISDN lines or the like.

The communications network 20 connects the modem 30

directly to a number of servers 100,200,210. Each of the servers 100,200,210 connected directly by the communications network 20 is also connected to one another via the internet 300 to one another and also to a number of servers 220,230 via the internet 300, which are not directly connected to the modem via the communications network 20.

When a user of the computer 10 wishes to download information from one of the servers 100,200,210 for which a direct communications link exists the user can connect to the remote server via the modem 30 and the communications network 20 directly. This is achieved by a user causing the modem 30 to dial a number corresponding to the direct communications link to the server 100,200,210 on the communications network 20. Alternatively, the user can connect the computer 10 to one of the servers 100,200,210 via the modem 30 and the communications network 20 and then be indirectly connected to any of the other servers 100,200,230 via the Internet 300. This is achieved by a user instructing the modem 30 to dial a number corresponding to the communications link to one of the servers for which a direct communications link exists 100,200,210 on the communications network 20 and then making use of the Internet 300 to transfer information between that server 100,200,210 and any of the other servers 200-230.

In this way if a direct communications link to a

server exists and a user is aware of that direct communications link, the user can obtain information from that server without needing to use the Internet 300. However, if no direct communications link exists or a user is not aware of a direct communications link to a server the user can still obtain information from the servers 100,200,230 indirectly via a server 100 for which a direct connection is known and the internet 300.

A second embodiment will now be described. In this second embodiment the apparatus is the same as has been previously described in relation to the first embodiment with the exception that the interface program 70 is modified. The present invention will now be described with reference to Figure 10 which is a flow diagram of the processing of data read from the magnetic strip 9 of a swipe card 2 after it has been transmitted and stored in the data storage portion 80 of the memory of the computer 4 in a similar manner to that described in the first embodiment.

In this embodiment of the present invention the magnetic strip 9 of the swipe card 2 is arranged to have recorded thereon data for either a web site address or a web site address and a telephone number for forming a direct communications link to a server. When data read from the swipe card 2 has been transferred to the data storage portion 80 of the memory of the computer 4 the interface module 70 is arranged to determine (s20)

whether the data which has been received comprises data indicative of a web address or data indicative of a direct communications link. If the data is indicative of a web address the interface module 70 proceeds (s18,s19) as has been described in relation to the first embodiment which will not be repeated here.

If however the data stored in the data storage portion of the memory 80 is determined to be indicative of a direct communications link, the interface module 70 causes (s21) the browser program 75 to form a communications link based upon the direct communications link data stored in the data storage portion 80 of the memory. The browser (s22) then forms a direct communications link by causing the modem 13 to make a telephone connection on the basis of the direct communications link data and thereby avoid the need to form a connection to the identified web site via the Internet.

In this way if a dedicated communications link to a server exists, by providing that data on the swipe card, a user can take advantage of that direct communications link although the user does not himself know of the existence of that link.

A third embodiment of the present invention will now be described. This third embodiment is the same as the first embodiment with the exception that the interface program 75 is modified. This embodiment will now be

described with reference to Figure 11 which is a flow diagram of the processing of data read from the magnetic strip 9 of a swipe card 2 after it has been transmitted and stored in the data storage portion 80 of the memory of a computer 4 as has previously been described in relation to the first embodiment.

In this embodiment of the present invention the magnetic strip 9 of a swipe card 2 is arranged to have recorded thereon identification data in addition to address data.

When the data is downloaded from the data buffer 52 of the card reader 3 it is stored (s25) in the data storage portion 80 of the memory of the computer 4. The interface module 70 is then arranged to transfer (s26) only the part of the data stored in the data storage portion 80 of the memory corresponding to address data to the browser program to cause (s27) the browser program to form a communications link as has already been described in relation to the previous embodiments of the present invention.

When a communications link has been formed between the computer 4 and a remote server, the web site which is then downloaded from the remote server is arranged to include a program which causes the computer 4 to transmit (s28) to the server the additional data stored in the data storage portion 80 of the memory of the computer 11. In this way the remote server can be made aware of the

identity of the card which has caused a communications link to be formed with the server. The remote server is then arranged to transmit or not to transmit (s29) further data to the computer 4 on the basis of said additional data.

Thus for example the server could be set up to restrict access to different web sites depending upon the identification data received. Alternatively, the remote server could have stored therein account data corresponding to the identification data on a card and the server could be arranged to charge for the use of a web site by updating account data associated with the received identification data, based upon monitoring the continued access of a web site through the generated communications link.

Although in the previous embodiment the present invention has been described in terms of the distribution of advertising leaflets other documents such as magazines, newspapers or other periodicals could be used to distribute swipe cards. Figure 13 is a schematic diagram of a magazine 45 in an open position having a swipe card 46 which is ready for removal from the magazine. In this example the swipe card 46 is not attached to the magazine 45 but merely rests on the upper surface of one of the pages of the magazine adjacent to the spine of the magazine. The swipe card 46 as recorded thereon address data for a web site. Printed on the page

of the magazine on which the swipe card 46 rests is an advert related to the information which appears on the web site to which the address data relates. By inserting a swipe card 46 within a magazine the swipe cards in accordance with the present invention could be distributed in a similar manner to the distribution of magazines, newspapers or other periodicals. When the swipe card is delivered together with the magazine 45, newspaper or other periodical the swipe card 46, the swipe card is held in place between the leaves of the magazine, newspaper or other periodical by means of friction. Once the magazine, newspaper or other periodical has been delivered, the swipe card 46 can then be removed and used in the manner previously described.

Although in relation to the above embodiments the distribution of swipe cards attached to advertising leaflets by means of glue and distribution by associating documents with newspapers, magazines or other periodicals has been described alternative means of attachment and distribution could be used. Figure 12 is a schematic diagram of another document having a swipe card attached thereto. In this example the document comprises a paper substrate 41 having a row of perforations 42 defining the upper edge of a lower detachable portion 43. The lower detachable portion 43 has provided thereon a magnetic strip 44 which has address data recorded thereon. When a user receives a document having a detachable swipe card

the user can separate the detachable portion 43 from the remainder of the paper substrate 41 by tearing along the perforations 42. Documents having a detachable portion to act as a swipe card could be distributed by post or any other conventional manner. Other documents such as magazines having pages with detachable portions for use as swipe cards could also be used as a way of distributing swipe cards having address data recorded thereon.

Alternatively instead of attaching or associating a swipe card with another document the swipe card itself could be distributed on its own. For example the swipe card could be printed in the manner of a business card and distributed in the same way as a business card in business meetings. In this way, by distributing business cards having magnetic strips carrying address data or data recorded in other readable form, it would be possible for business people to distribute cards directing customers to the business' web site to obtain further information about their products for example.

It will also be appreciated that instead of providing a card reader for reading data recorded on a card a document reader could be provided to read printed address data appearing directly on a portion of the document. It will be appreciated that machine readable address data recorded on a portion of a document could be read directly from the document by a reader without

that portion of the document being detached from the remainder of the document.

The embodiments of the present invention enable individuals to access web sites more easily since a web address no longer needs to be manually input. The present invention may also be used to access search engines or Internet 'portals' which may themselves be used to access further web sites.

It will also be appreciated that although the present invention has been described in terms of obtaining information from web sites, the present invention could also be applied to transferring information by e-mail.

By providing swipe cards having address data corresponding to direct communications links, a means is provided to identify those dedicated connections to users and so improve the ability of users to take advantage of such links.

By providing swipe cards having identification data in addition to address data, a means is provided for servers to identify who is accessing their web site. A provider of a web site can then either restrict access to those sites to appropriate individuals or alternatively use the identification data to cause charges to be made to an account corresponding to a card and thereby charge for access to a web site.

Where charges are to be made for a web site the

swipe cards could be sold and a server could merely deduct credit for access to a web site from a central account associated with the identification data on a card until the total credit on a card has been exhausted. If a user then wished to continue to access a web site the user would then be obliged to purchase a new card. If the identification number on a swipe card were to be detected or the card to be lost, an individual's loss would be limited to the amount of credit for which the card has been purchased. The present invention therefore provides a means for charging for internet access which overcomes the problems involved due to individuals reluctance to transmit credit card numbers across the internet.

Although reference has been made in the specification to the use of swipe cards having data recorded on a magnetic strip it will be appreciated that in addition to recording data on a magnetic strip on a card magneto-optical or optical methods could also be used. It will also be appreciated that any suitable type of document reader could be used such as a barcode reader or a smart card reader.

Although the embodiments of the invention described with reference to the drawings comprise computer apparatus and processes performed in computer apparatus, the invention also extends to computer programs, particularly computer programs on or in a carrier,

adapted for putting the invention into practice. The program may be in the form of source or object code or in any other form suitable for use in the implementation of the processes according to the invention. The carrier be any entity or device capable of carrying the program.

For example, the carrier may comprise a storage medium, such as a ROM, for example a CD ROM or a semiconductor ROM, or a magnetic recording medium, for example a floppy disc or hard disk. Further, the carrier may be a transmissible carrier such as an electrical or optical signal which may be conveyed via electrical or optical cable or by radio or other means.

When a program is embodied in a signal which may be conveyed directly by a cable or other device or means, the carrier may be constituted by such cable or other device or means.

Alternatively, the carrier may be an integrated circuit in which the program is embedded, the integrated circuit being adapted for performing, or for use in the performance of, the relevant processes.

CLAIMS

1. An information transfer system, comprising:

a plurality of Internet addressing apparatus, said apparatus each comprising:

a computer having a web browser stored therein; and

a reader for reading data from a data carrier;

a plurality of servers having stored therein web sites, said web sites all having addresses; and

a plurality of documents which are separate from said computers, said readers and said servers, said documents having associated therewith or attached thereto a data carrier which has recorded thereon address data in a form readable by said reader, said address data defining the address of a predetermined web site;

wherein each of said addressing apparatus, further comprises:

means for causing said reader to read said address data for a web site from a said data carrier and to transfer said address data to said web browser; and

means for causing said web browser to address said web site utilising the address data transferred thereto from said reader and to receive information transferred to said computer from said web site in response to said addressing of said web site.

2. An information transfer system comprising:

a plurality of Internet addressing apparatus, said apparatus each comprising:

a computer having a web browser stored therein; and

a reader for reading data from a data carrier;

a plurality of servers having stored therein web sites, said web sites all having addresses; and

a plurality of documents which are separate from said computers and said readers, a portion of said document comprising a data carrier which has recorded thereon address data in a form readable by said reader, said address data defining the address of a predetermined web site;

wherein each of said addressing apparatus further comprises:

means for causing a said reader to read said address data for a web site from a said data carrier and to transfer said address data to said web browser; and

means for causing said web browser to address said web site utilising the address data transferred thereto from said reader and to receive information transferred to said computer from said web site in response to said addressing of said web site.

3. An information transfer system according to claim 1 or 2, in which said readers are adapted to read data in magnetic form and said address data is recorded on said data carriers in magnetic form.

4. An information addressing system according to claim 2, in which said readers are adapted to read bar codes and said address data is recorded on said data carriers in the form of bar codes.

5. Apparatus according to any of claims 1 to 4, wherein said documents comprise a paper or plastic substrate.

6. Internet addressing apparatus for obtaining information from a predetermined web site via the Internet, comprising:

a computer having a web browser stored therein;

a reader for reading data from a data carrier;

a document which is separate from said computer and said reader, said document having associated therewith or attached thereto a data carrier which has recorded thereon address data in a form readable by said reader, said address data defining the address of said predetermined web site;

means for causing said reader to read said address data from said data carrier and to transfer said address data to said web browser; and

means for causing said web browser to address said web site utilising the address data transferred thereto from said reader and to receive information transferred to said computer from said web site in response to said addressing of said web site.

7. Internet addressing apparatus for obtaining information from a predetermined web site via the internet, comprising:

a computer having a web browser stored therein;

a reader for reading data from a data carrier;

a document which is separate from said computer and said reader, a portion of said document comprising a data carrier which has recorded thereon address data in a form readable by said reader, said address data defining the address of said predetermined web site;

means for causing said reader to read said address data from said data carrier and to transfer said address data to said web browser; and

means for causing said web browser to address said web site utilising the address data transferred thereto from said reader and to receive information transferred to said computer from said web site in response to said addressing of said web site.

8. Apparatus according to claim 6 or 7, in which said reader is adapted to read data in magnetic form and said address data is recorded on said data carrier in magnetic form.

9. Apparatus according to claim 6 or 7, in which said reader is adapted to read bar codes and said address data is recorded on said data carrier in the form of a bar

code.

10. Apparatus according to any of claims 6 to 9, wherein said document comprises a paper or plastic substrate.

11. An information carrier having recorded thereon means for generating within a computer said means for causing a web browser in a computer to address a web site utilising address data transferred thereto from a reader in accordance with any of claims 6 to 10.

12. An information carrier in accordance with claim 11 having recorded thereon means for generating within a computer means for determining whether said address data transferred thereto from a reader relates to a direct communications link, said means being arranged to cause said browser to transfer information via said direct communications link, if said means determines said data relates to a said direct communications link.

13. An information carrier in accordance with claims 11 or 12 having recorded thereon means for causing a browser in a computer to transmit to a web site further data transferred thereto from a reader.

14. An information carrier in accordance with any of claims 11 to 13 comprising a computer disc.

15. A computer disc in accordance with claim 14, wherein said computer disc comprises an optical, magnetic optical or magnetic disc.

16. An information carrier in accordance with any of claims 11 to 13 comprising an electrical signal transferred via the Internet.

17. A process for obtaining information from a predetermined web site via the Internet, comprising:

providing a computer;

providing a reader for reading data from a data carrier;

providing a document which is separate from said computer and said reader, said document having associated therewith or attached thereto a data carrier which has recorded thereon address data in a form readable by said reader, said address data defining the address of said predetermined web site;

presenting said data carrier to said reader and causing said reader to read said address data from said data carrier;

transferring said address data to said computer;

causing said computer to address said web site utilising the address data transferred thereto from said reader; and

transferring information from said web site to said

computer via the Internet, in response to said addressing of said web site.

18. A process according to claim 17 further comprising prior to presenting said data carrier to said reader the step of separating said data carrier from said document.

19. A process for obtaining information from a predetermined web site via the Internet, comprising:

providing a computer;

providing a reader for reading data from a data carrier;

providing a document which is separate from said computer and said reader, a portion of said document, comprising a data carrier which has recorded thereon address data in a form readable by said reader, said address data defining the address of said predetermined web site;

presenting said portion of said document comprising said data carrier to said reader and causing said reader to read said address data from said data carrier;

transferring said address data to said computer;

causing said computer to address said web site utilising the address data transferred thereto from said reader; and

transferring information from said web site to said computer via the Internet, in response to said addressing

of said web site.

20. A process according to any of claims 17 to 19, in which said reader is adapted to read data in magnetic form and said address data is recorded on said data carrier in magnetic form.

21. A process according to any of claims 17 to 19, in which said reader is adapted to read bar codes and said address data is recorded on said data carrier in the form of a bar code.

22. A process according to any of claims 17 to 21, wherein said data carrier comprises a paper or plastic substrate.

23. A process according to any of claims 17 to 22, wherein said causing step comprises the steps of:

activating a browser program provided in said computer; and

inputting said address data transferred to said computer into said browser program to cause said computer to address said web site.

24. A process according to any of claims 17 to 23 further comprising the step of determining whether said address data transferred to said computer relates to a

direct communications link to a web site, wherein if said data relates to a direct communications link, said transfer of information from said web site is performed via said direct communications link.

25. A process according to any of claims 17 to 24, wherein said document has recorded thereon further data in a form readable by said reader, further comprising the steps of reading said further data from said document;

transferring said data to said computer; and

transmitting said data to said web site.

26. A process according to claim 25 wherein said web site is arranged to transmit further information following the receipt of said further data.

27. A process according to claim 25 or 26 wherein said web site is arranged to store account data, wherein said web site is arranged to update said account data utilising receipt of said further data.

28. A data carrier having recorded thereon address data in a form readable by a said reader for use in a process in accordance with any of claims 17 to 26.

29. A book, magazine or other periodical having attached or associated therewith a data carrier in accordance with

claim 12.

30. A reader for connection to a computer, for reading data from a data carrier in accordance with claim 28, said reader comprising:

means for causing a web browser in a computer to address a web site utilising address data read from a document separate from said computer and said reader.

31. A reader in accordance with claim 30, said reader further comprising:

means for determining whether address data relates to a direct communications link, said means being arranged to cause a browser in a computer to transfer information via said direct communications link, if said means determines said data relates to a direct communications link.

32. A reader in accordance with claim 30 or 31, said reader further comprising:

means for causing a browser in a computer to transfer further data read by said reader from a data carrier separate from said computer and said reader to a web site.

33. Apparatus for use in a process for obtaining information from a predetermined web site via the

Internet in accordance with any of claims 17 to 27, comprising:

a computer having a web browser stored therein;

a reader for reading data from a data carrier;

means for causing said reader to read said address data from a data carrier and to transfer said address data to said web browser; and

means for causing said web browser to address said web site utilising the address data transferred thereto from said reader and to receive information transferred to said computer from said web site in response to said addressing of said web site.

34. Apparatus according to claim 33, in which said reader is adapted to read data in magnetic form.

35. Apparatus according to claim 34, in which said reader is adapted to read bar codes.

36. Apparatus for facilitating the retrieval of information from predetermined web sites, comprising:

a distributable document in hard copy form; and

a data carrier assembled with said distributable document, said data carrier being removable from said document and having recorded thereon in machine readable form address data for addressing a predetermined web site.

37. Apparatus in accordance with claim 36, wherein said distributable document comprises any one of a magazine, newspaper, advertising leaflet or periodical.

38. Apparatus in accordance with claim 36, wherein said distributable document comprises a paper, card or plastic substrate.

39. Apparatus in accordance with any one of claims 36 to 38, wherein said data carrier comprises a paper, card or plastic substrate.

40. Apparatus in accordance with any one of claims 36 to 39, wherein said data carrier has said address data recorded thereon in magnetic form.

41. Apparatus in accordance with any one of claims 36 to 39, wherein said data carrier has said address data recorded thereon in the form of a barcode.

42. Apparatus in accordance with any one of claims 36 to 41, wherein said data carrier is detachably attached to said distributable document.

43. Apparatus in accordance with claim 42, wherein said data carrier is detachably attached to said distributable document by means of glue.

44. Apparatus in accordance with any of claims 36 to 41, wherein said data carrier comprises a portion of said distributable document, detachably removable from the remainder of said distributable document.

45. Apparatus in accordance with claim 44, wherein said portion of said distributable document comprises a portion of said distributable document, at least part of the perimeter of which is defined by a series of perforations.

46. A process for transferring data from a first computer terminal to a second computer terminal via a communications network comprising the steps of:

machine reading data from a hard copy document by said first computer terminal,

forming a communications link to said second computer terminal via said communications network on the basis of said data and transferring data from said second computer terminal to said first computer terminal via said communications link.

47. Information transfer apparatus comprising:

a first computer terminal including machine reading means for reading data from a hard copy document;

a second computer terminal having stored therein information to be transferred to said first computer

terminal; and

means for establishing a communications link between said first computer terminal and said second computer terminal on the basis of data read by said reading means from a hard copy document.

48. A process for obtaining information from a predetermined web site via the internet, substantially as herein described with reference to the accompanying drawings.

49. Apparatus for obtaining information from a predetermined web site via the internet, substantially as herein described with reference to the accompanying drawings.

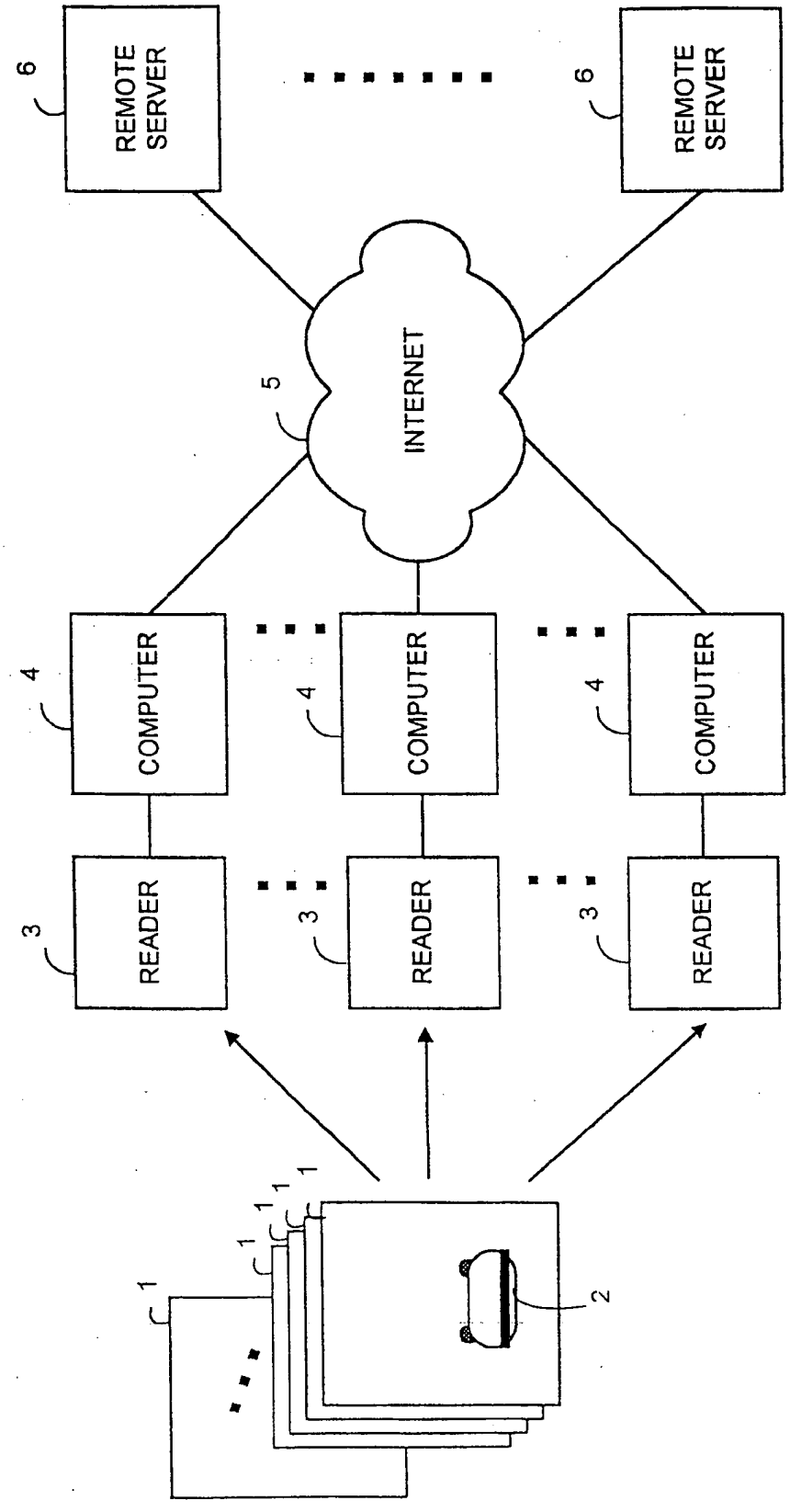

REMOTE SERVER
6
REMOTE SERVER
6
INTERNET
5
COMPUTER
4
COMPUTER
4
COMPUTER
4
READER
3
READER
3
READER
3
1
1
1
1
1
2

FIG. 1

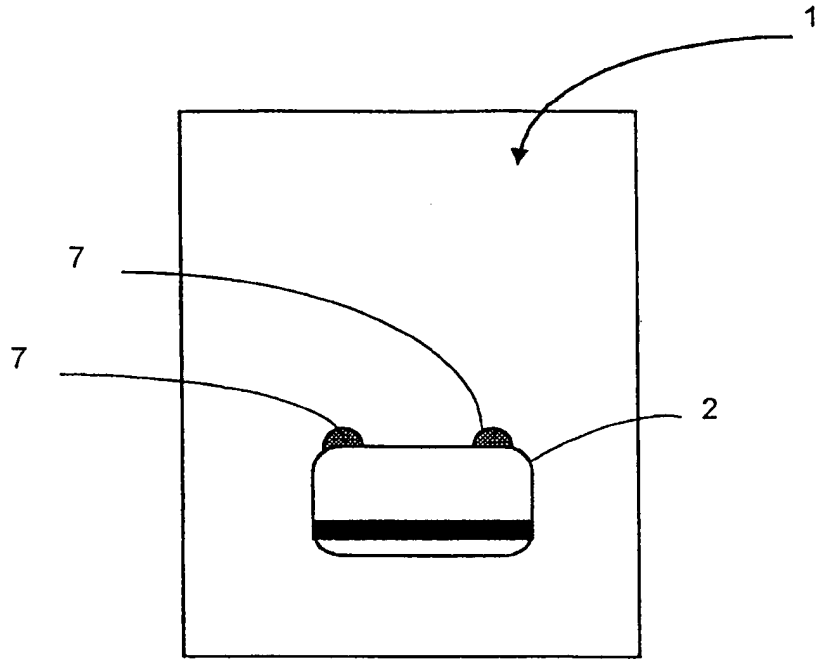


FIG. 2

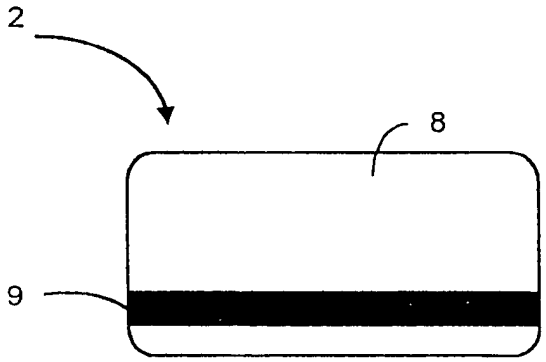


FIG. 3

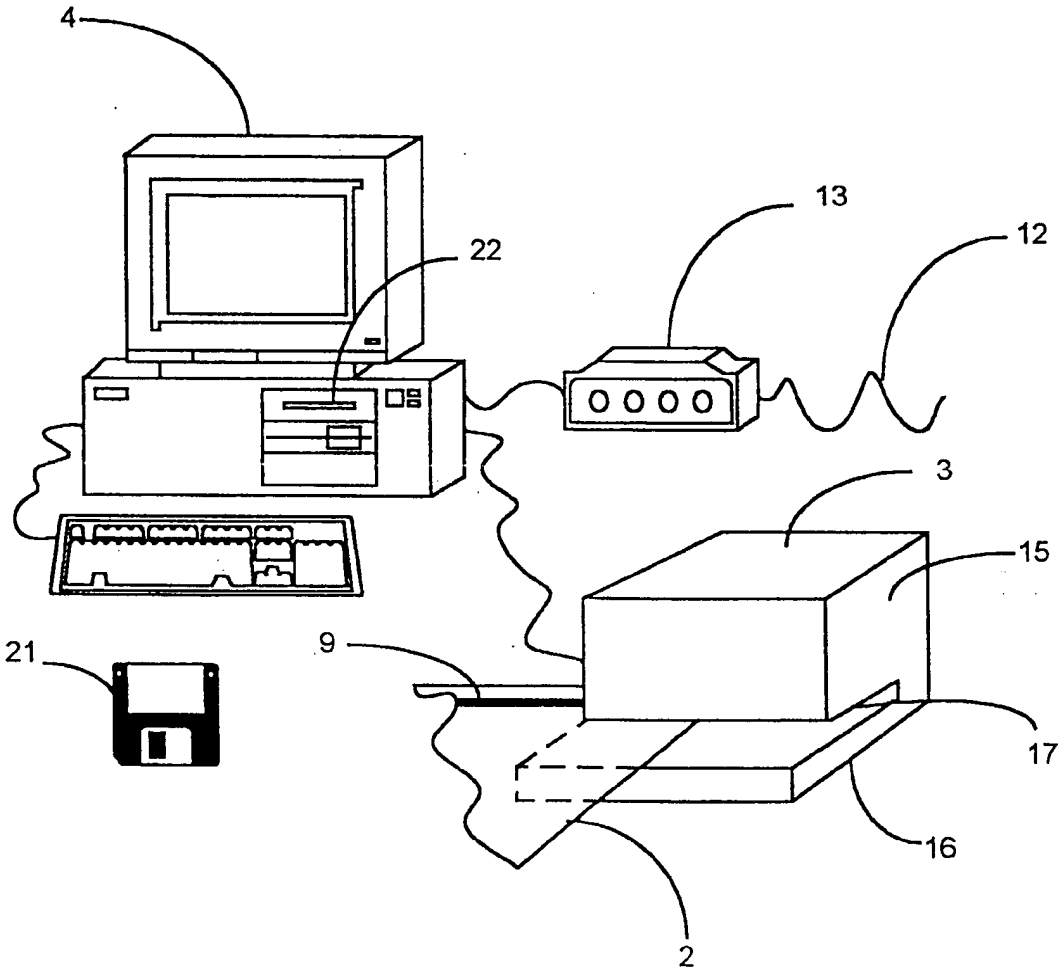


FIG. 4

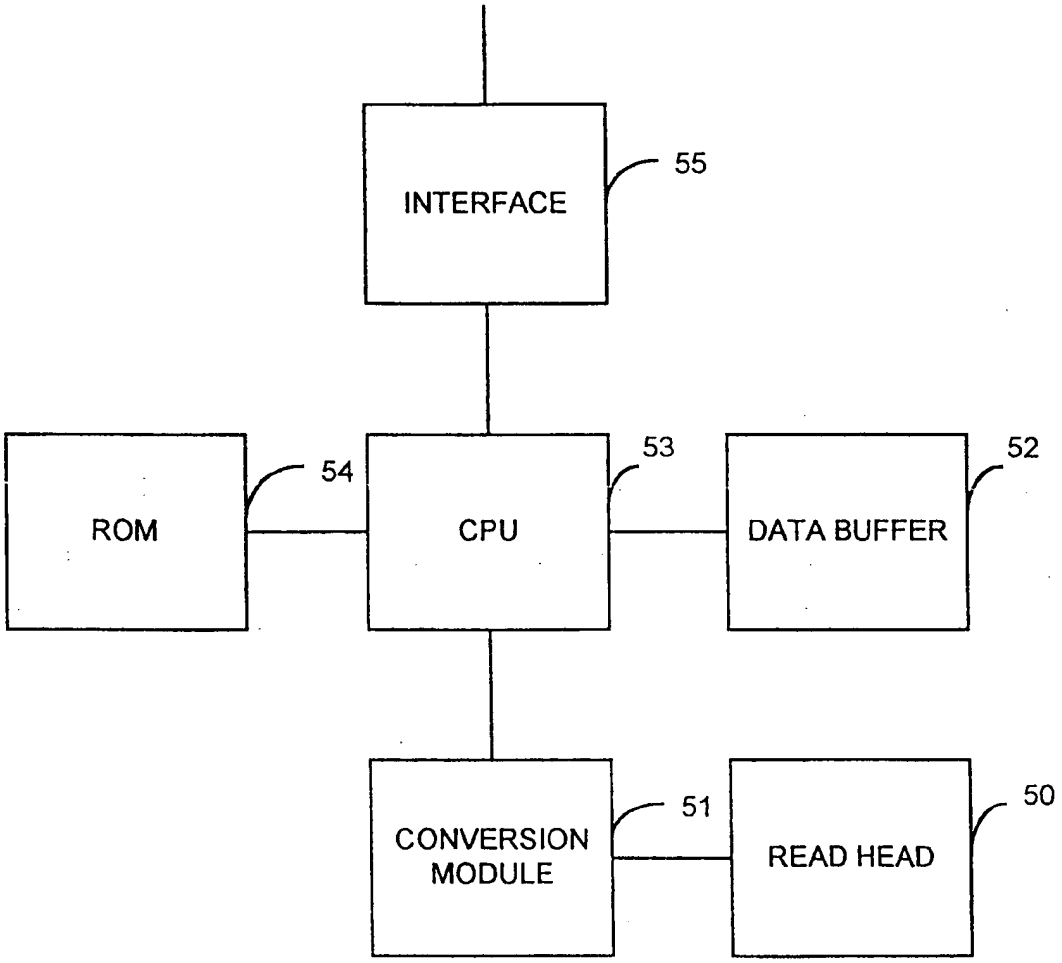

INTERFACE
55
ROM
54
CPU
53
DATA BUFFER
52
CONVERSION MODULE
51
READ HEAD
50

FIG. 5

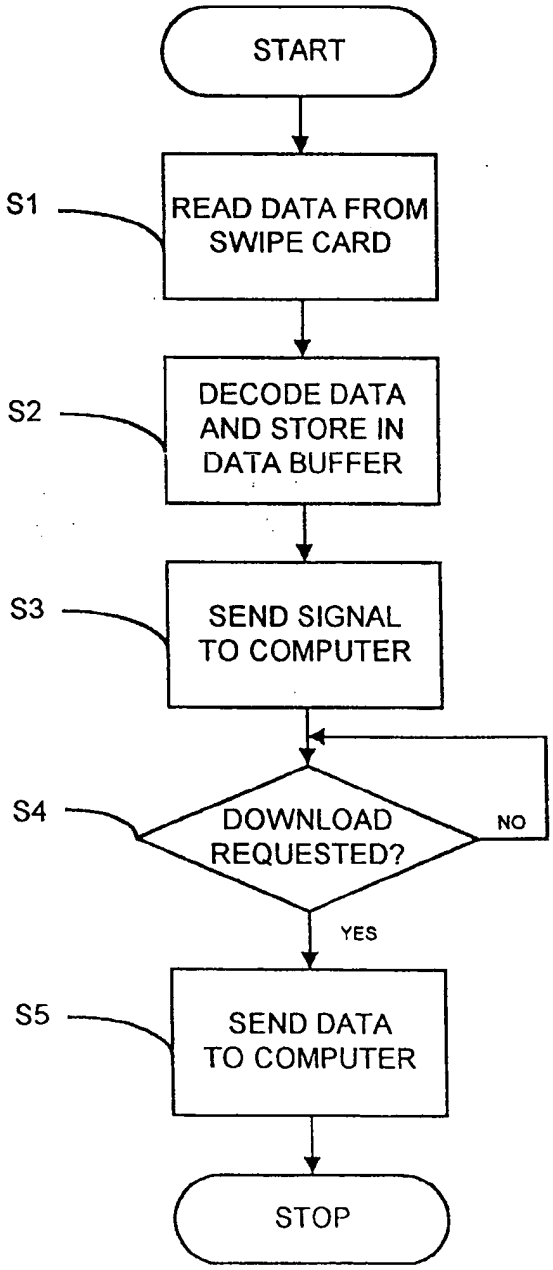

START
S1
READ DATA FROM SWIPE CARD
S2
DECODE DATA AND STORE IN DATA BUFFER
S3
SEND SIGNAL TO COMPUTER
S4
DOWNLOAD REQUESTED?
NO
YES
S5
SEND DATA TO COMPUTER
STOP

FIG. 6

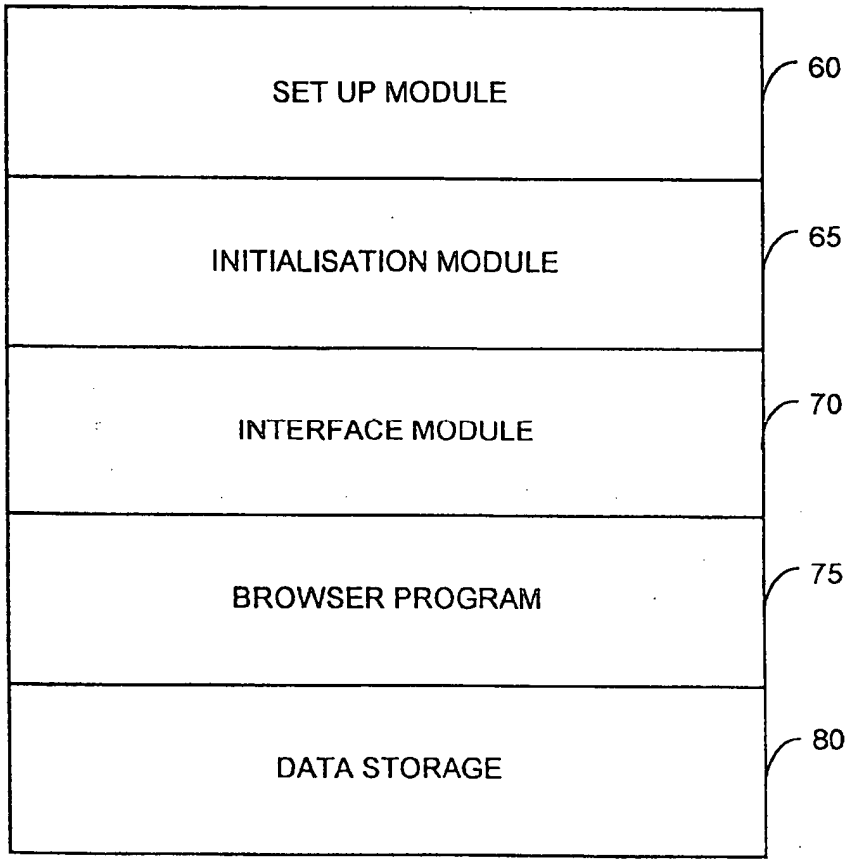

SET UP MODULE
60
INITIALISATION MODULE
65
INTERFACE MODULE
70
BROWSER PROGRAM
75
DATA STORAGE
80

FIG. 7

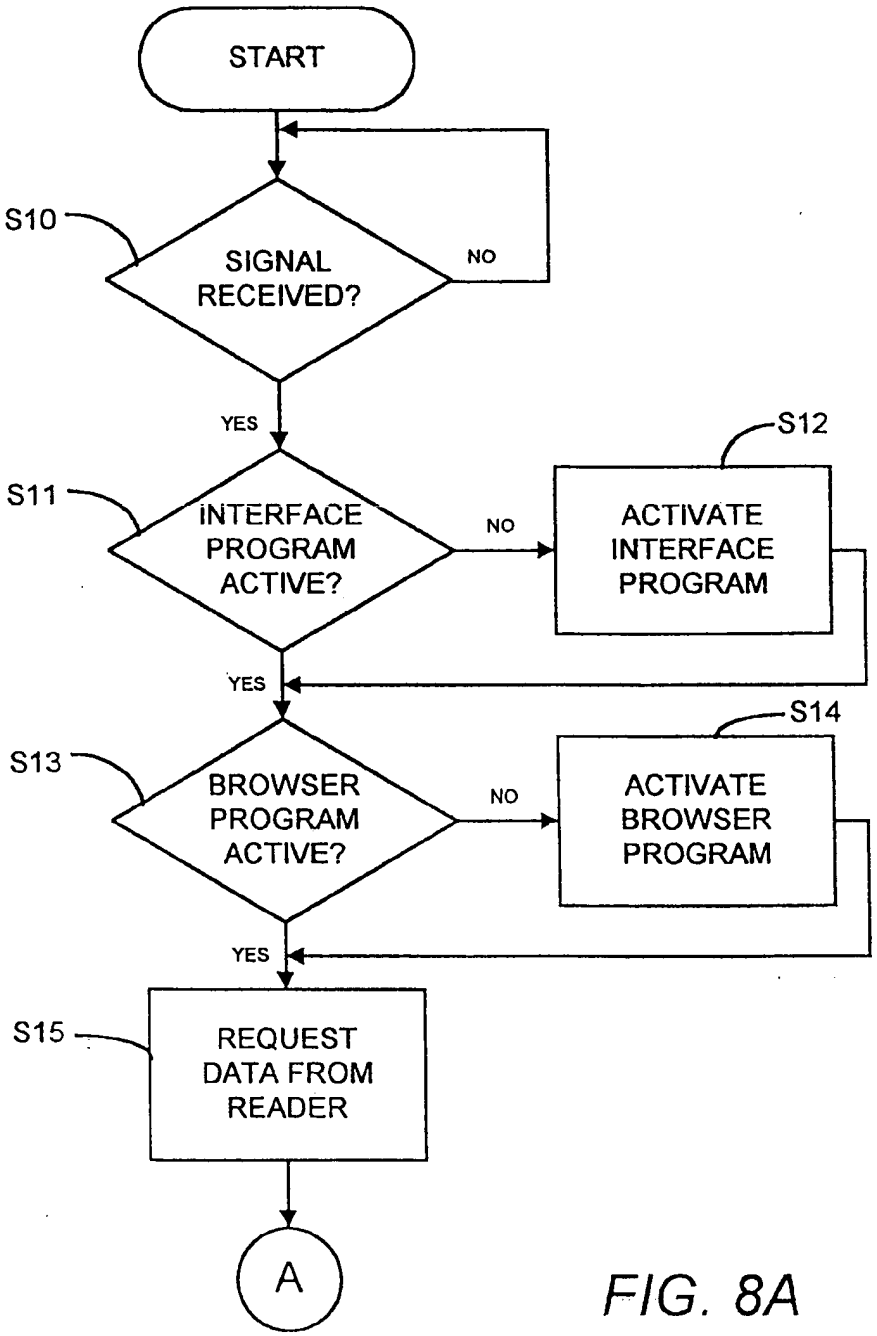

START
S10
SIGNAL RECEIVED?
NO
YES
S11
INTERFACE PROGRAM ACTIVE?
NO
S12
ACTIVATE INTERFACE PROGRAM
YES
S13
BROWSER PROGRAM ACTIVE?
NO
S14
ACTIVATE BROWSER PROGRAM
YES
S15
REQUEST DATA FROM READER
A

FIG. 8A

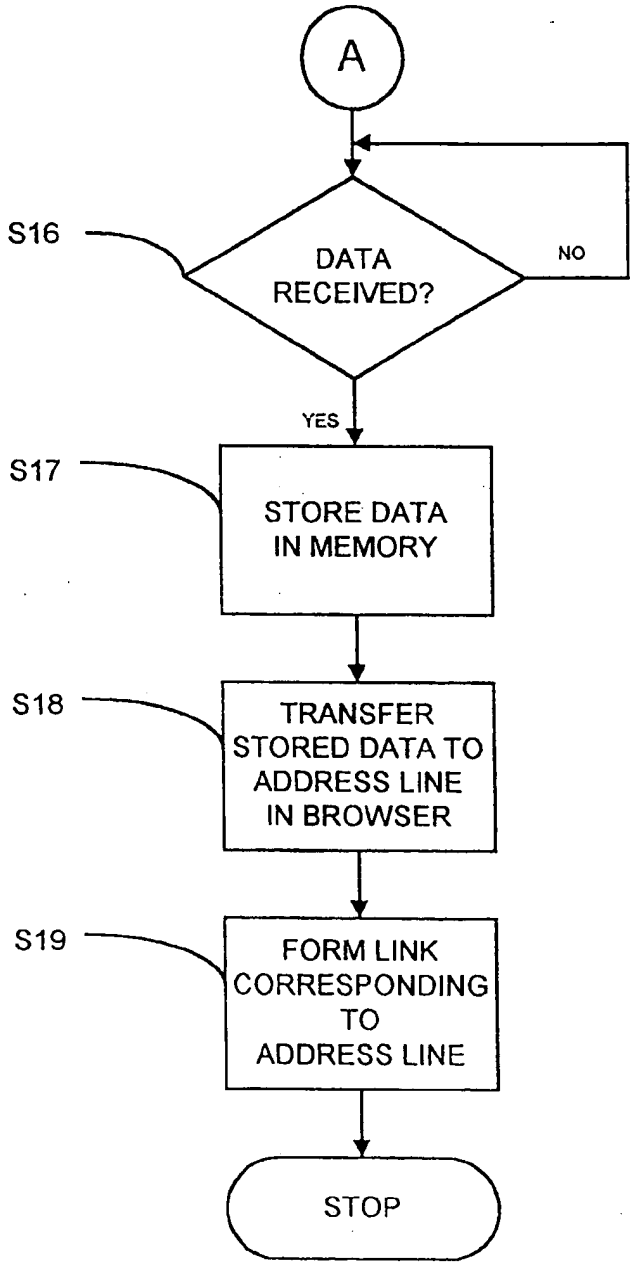

A
S16
DATA RECEIVED?
NO
YES
S17
STORE DATA IN MEMORY
S18
TRANSFER STORED DATA TO ADDRESS LINE IN BROWSER
S19
FORM LINK CORRESPONDING TO ADDRESS LINE
STOP

FIG. 8B

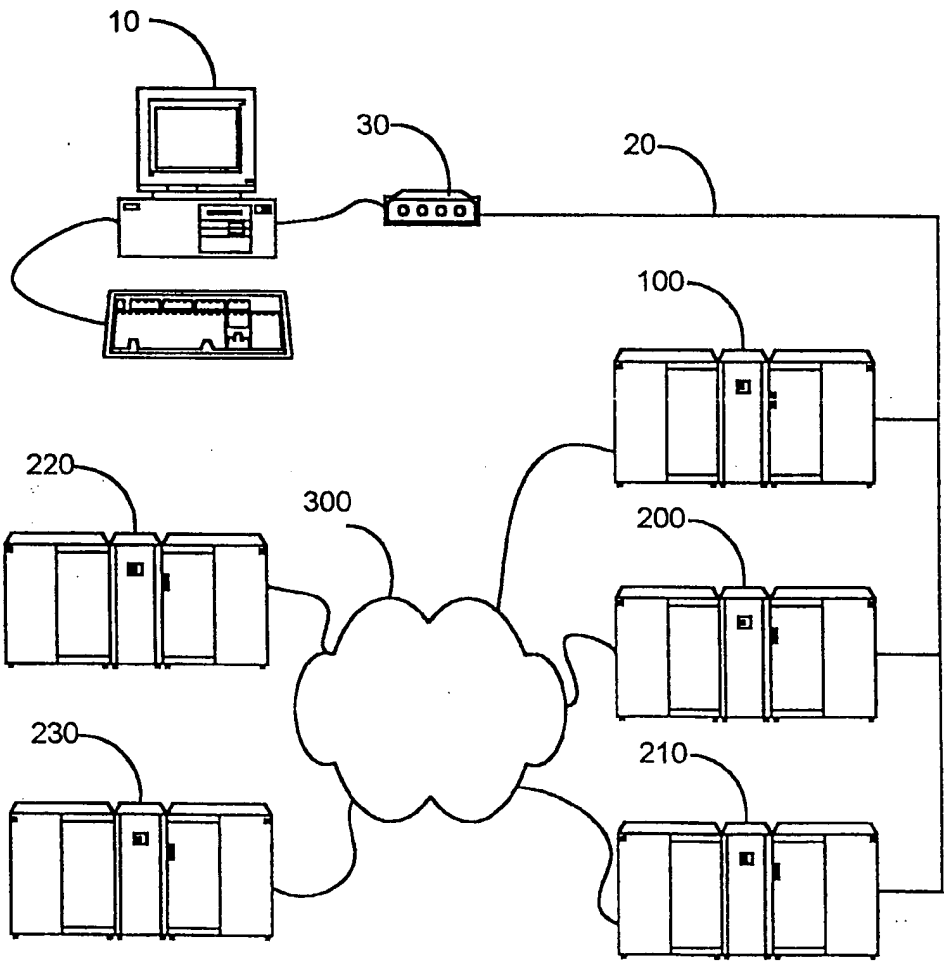


FIG. 9

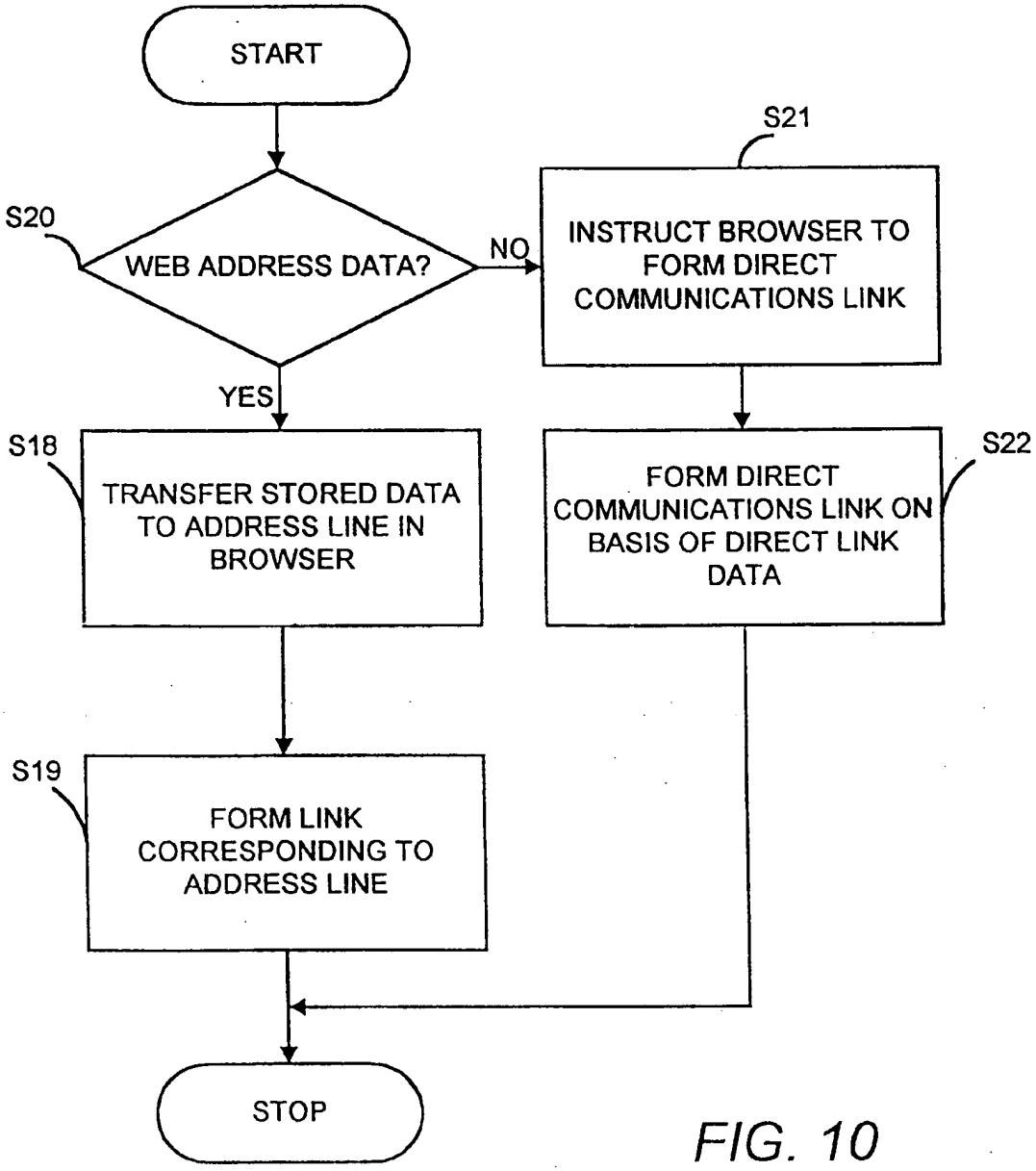

START
S20
WEB ADDRESS DATA?
NO
S21
INSTRUCT BROWSER TO FORM DIRECT COMMUNICATIONS LINK
YES
S18
TRANSFER STORED DATA TO ADDRESS LINE IN BROWSER
S22
FORM DIRECT COMMUNICATIONS LINK ON BASIS OF DIRECT LINK DATA
S19
FORM LINK CORRESPONDING TO ADDRESS LINE
STOP

FIG. 10

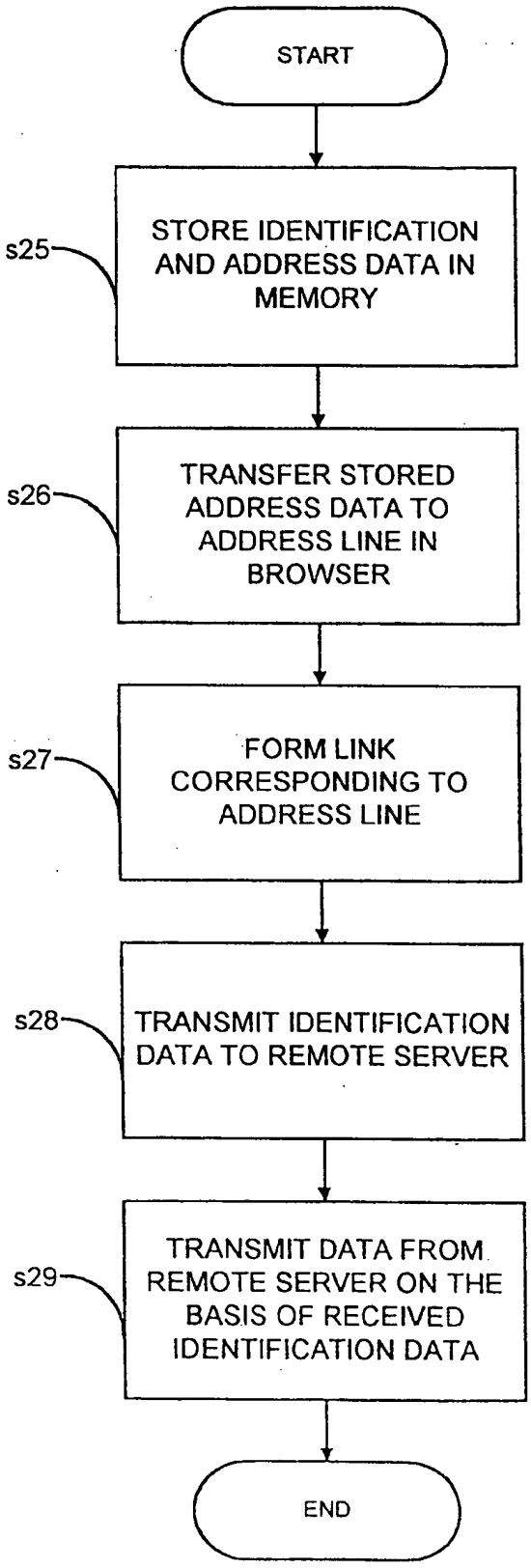

START
s25
STORE IDENTIFICATION AND ADDRESS DATA IN MEMORY
s26
TRANSFER STORED ADDRESS DATA TO ADDRESS LINE IN BROWSER
s27
FORM LINK CORRESPONDING TO ADDRESS LINE
s28
TRANSMIT IDENTIFICATION DATA TO REMOTE SERVER
s29
TRANSMIT DATA FROM REMOTE SERVER ON THE BASIS OF RECEIVED IDENTIFICATION DATA
END

FIG. 11

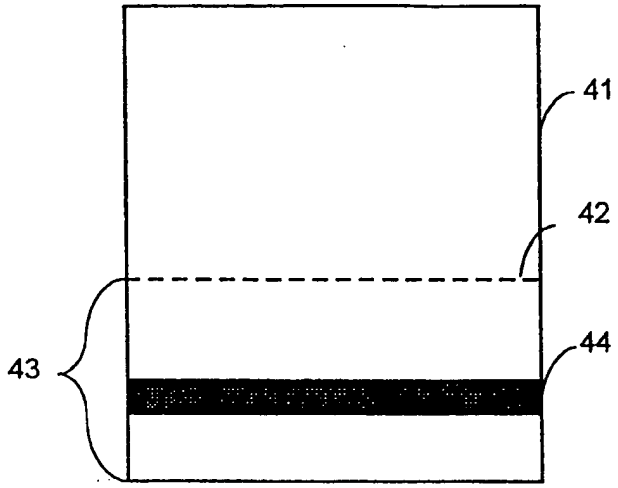


FIG. 12

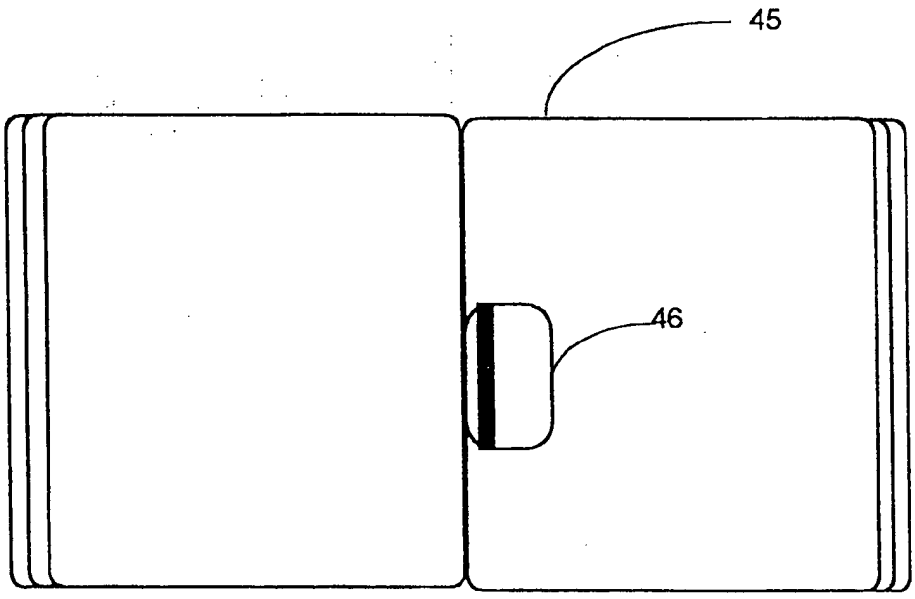


FIG. 13

INTERNATIONAL SEARCH REPORT

Inter ~ onal Application No
PCT/GB 99/01766

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 G06F17/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 98 20411 A (NEOMEDIA TECHNOLOGIES INC) 14 May 1998 (1998-05-14) page 1, line 11 -page 8, line 20; claims; figures 1,6 ---	1-49
Y	US 5 281 799 A (MCINTIRE HARLEY J ET AL) 25 January 1994 (1994-01-25) abstract; figure 3B ---	1-49
X	WO 98 06055 A (RAPAPORT JEFFREY ALAN ;RAPAPORT SEYMOUR ALVIN (US)) 12 February 1998 (1998-02-12) page 3, line 1 -page 4, line 20 --- -/--	1,2,6,7, 11,17, 19, 28-30, 33,46-49

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
4 October 1999	12/10/1999

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Fournier, C

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Interr ' 'onal Application No
PCT/GB 99/01766

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	"DISTRIBUTING UNIFORM RESOURCE LOCATORS AS BAR CODE IMAGES" IBM TECHNICAL DISCLOSURE BULLETIN, vol. 39, no. 1, 1 January 1996 (1996-01-01), page 167 XP000556360 ISSN: 0018-8689 the whole document	1-49

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/GB 99/01766

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9820411 A	14-05-1998	NONE	
US 5281799 A	25-01-1994	US 5410136 A	25-04-1995
		CA 2095912 A,C	23-12-1993
		EP 0580280 A	26-01-1994
		JP 7013463 A	17-01-1995
		MX 9302995 A	31-05-1994
		US 5439255 A	08-08-1995
WO 9806055 A	12-02-1998	NONE	